Fig: 1

Scheme

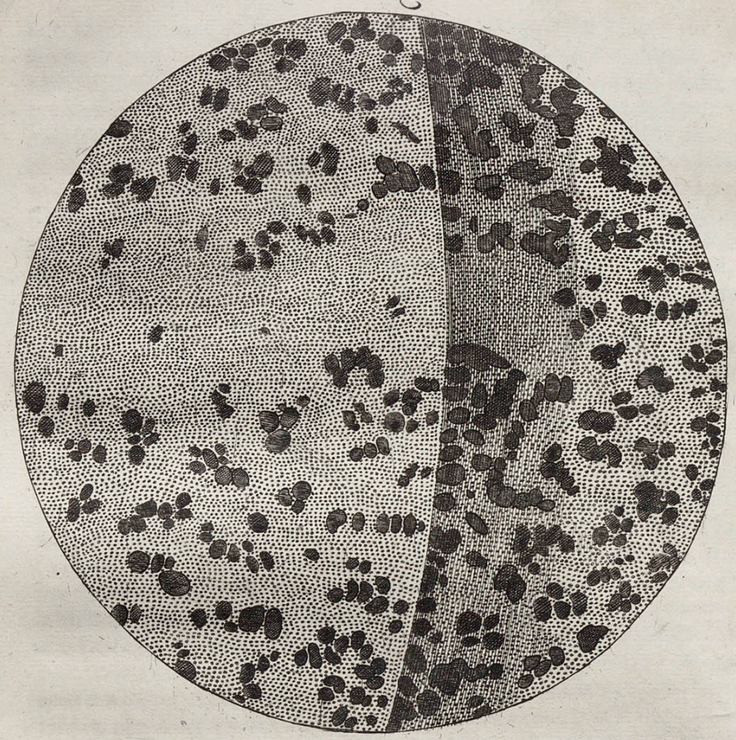
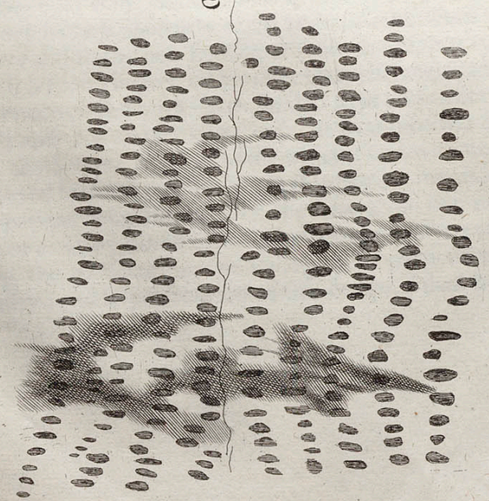


Fig: 2:





## Obſerv. XVII. *Of* Petrify'd wood, *and other* Petrify'd bodies.

OF this ſort of ſubſtance, I obſerv'd ſeveral pieces of very differing kinds, both for their outward ſhape, colour, grain, *texture*, hardneſs, *&c.* ſome being brown and rediſh; others gray, like a Hone; others black, and Flint-like: ſome ſoft, like a Slate or Whetſtone, others as hard as a Flint, and as brittle. That which I more particular examin'd, was a piece about the bigneſs of a mans hand, which ſeem'd to have been a part of ſome large tree, that by rottenneſs had been broken off from it before it began to be *petrify'd*.

And indeed, all that I have yet ſeen, ſeem to have been rotten Wood before the petrifaction was begun; and not long ſince, examining and viewing a huge great *Oak*, that ſeem'd with meer age to be rotten as it ſtood, I was very much confirm'd in this opinion; for I found, that the grain, colour, and ſhape of the Wood, was exactly like this *petrify'd* ſubſtance; and with a *Microſcope*, I found, that all thoſe *Microſcopical* pores, which in ſappy or firm and ſound Wood are fill'd with the natural or innate juices of thoſe Vegetables, in this they were all empty, like thoſe of *Vegetables charr'd*; but with this difference, that they ſeem'd much larger then I have ſeen any in *Char-coals*; nay, even then thoſe of Coals made of great blocks of Timber, which are commonly call'd *Old-coals*.

The reaſon of which difference may probably be, that the charring of Vegetables, being an operation quickly perform'd, and whileſt the Wood is ſappy, the more ſolid parts may more eaſily ſhrink together, and contract the pores or *interſtitia* between them, then in the rotten Wood, where that natural juice ſeems onely to be waſh'd away by *adventitious* or unnatural moiſture; and ſo though the natural juice be waſted from between the firm parts, yet thoſe parts are kept aſunder by the *adventitious* moyſtures, and ſo by degrees ſettled in thoſe poſtures.

And this I likewiſe found in the *petrify'd* Wood, that the pores were ſomewat bigger then thoſe of *Charcoal*, each pore being neer upon half as bigg again, but they did not bear that diſproportion which is expreſt in the tenth *Scheme*, between the ſmall ſpecks or pores in the firſt Figure (which repreſenteth the pores of Coal or Wood charr'd) and the black ſpots of the ſecond Figure (which repreſent the like *Microſcopical pores* in the *petrify'd* Wood) for theſe laſt were drawn by a *Microſcope* that magnify'd the object above ſix times more in Diameter then the *Microſcope* by which thoſe pores of Coal were obſerv'd.

Now, though they were a little bigger, yet did they keep the exact figure and order of the pores of Coals and of rotten Wood, which laſt alſo were much of the ſame cize.

The other Obſervations on this *petrify'd* ſubſtance, that a while ſince, by the appointment of the *Royal Society*, I made, and preſented to them an account of, were theſe that follow, which had the honour done them